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SUPERORGANISM I.

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The course that we have shared during the months of September to December of the year 2020 between the Laboratory Workshop 4B of the Faculty of Architecture, Urbanism and Design of the University of Mendoza and the Udd 24-Soriano of the Higher Technical School of Architecture of the University Politécnica de Madrid was a very powerful and enriching teaching experience. These two academic units from two continents, of two similar levels, met to jointly and simultaneously teach students from both institutions who, forming mixed work cells, presented a unique architectural project. The interchangeable corrections were closed with some qualifications, from everyone to everyone, becoming a sample of the integration of the work method, through the disappearance of limits and borders, and the combination in a single teaching entity.

We wonder if information technology produces mutations in the Design Process. Decisively influenced by the selection of information, which, in previous times, the subjectivity of the designer who worked through the use of the program as a "pretext" prevailed. This new paradigm has implications not only in the practice of architecture, but also in its teaching, where the program acquires the value of one among many "inputs".

The program is, at the same time, very present, because the client takes it with him in each direct correction in which he participates and at the same time, it totally disappears from the design process, (as proof of decisions) replaced by other processes and concepts. The urban, the economic, the constructive, the technical acquire more strength,

By implementing software such as Rhinoceros and Grasshopper, it was possible to verify how technology is not only a support tool in education, but is also decisive in the configuration of diagrams in the project procedure. In the virtual space the joint work was developed. It is in this interface the "place" where each member contributed their idea to a comprehensive project in constant transformation.

The University ceases to be a stable physical place, in a single point, to become a collaborative network controlled by the student. They and they will replace a title linked to a site, a historical institution and a building by a passport filled with various faculties, with various professors, linked to divergent but personal interests. The student will build, make, this way, his own study plan, adapting it in real time to her interests. In short, to the future and skills that she wants to achieve.

The democratic and collective thought allows a constant exploration and testing of possibilities, expanding its scope. This experience modified the records of traditional education towards a democratization of knowledge and information, generating significant social and cultural repercussions. In distant places, a relationship was simultaneously achieved through the network. The teacher leaves the platform and begins to interact on platforms such as Teams and Miro, generating a change in the teacher-student relationship.

The concept of living appears as a referent that goes beyond what it initially meant. Its sphere, which until now was closed to the domestic sphere, is extended to the social field. To the relational between people, to coexistence in any field.

The space to inhabit becomes flexible. New needs arise before new challenges. The combination of different cultures and visions enrich a generative design created from the interrelation of data and information. The validations of different affirmations give the security to the students to continue with the experimentation in pursuit of a surprising and satisfactory result.

The result has been splendid. The

methodology has been shown to be very efficient in this stage of the pandemic and confinements, where the physical distance was the same for everyone regardless of geographical position, recovering learning between students, the so-called learning in the corridors, much more intense than what teachers can solve in the classroom. The aid has multiplied. There have been no dropouts when some supported others.

The experience took a collaborative dynamic where the cultural differences and coincidences of the academic units of two continents discover an enriching synergy that enhances critical thinking, achieving a superorganism.

INTRODUCTION

The proposed activity was raised in order to put into practice the existing coincidences of two subjects belonging to two Schools of Architecture. These coincidences were found from the relationship between two tenured professors: Arch. Federico Soriano from the ETSAM-UPM and Arch. Stella López Frasca from the FAU of the University of Mendoza, who proposed putting into practice their conceptual proposals framed in the technological-informational paradigm.

The Head Teachers of the Workshop set themselves the challenge of holding a joint workshop. During a semester, to test the development of the program of both subjects, 3 weekly meetings of three hours each were planned, for 14 weeks. It was necessary to work for the time coincidence, for which it was essential to have flexibility in the pedagogical development, of the workshop of both schools.

From the shared experience, we sought to achieve a collaborative dynamic activity where the cultural differences and coincidences of the two academic units of two continents (Europe and South America) discover an enriching synergy that enhances critical thinking. During the experience of linking both subjects, the question arose if information technology produces different ways of understanding the Design Process and therefore results prefigured by these technologies. Decisively influenced by the selection of information, which, in previous times, the subjectivity of the designer who worked through the use of the program as a "pretext" prevailed.

A new turning point in the evolution of architecture was the presentation Complexity and Contradiction in Architecture, by Robert Venturi published in 1966 by the Museum of Modern Art in New York, and The Learning from Las Vegas, Venturi, Scott Brown and Izenour, 1977. His work "contributed to usher in a new era, since it influenced more than any other treatise on the evolution of architecture in the last third of the 20th century" (Biermann et al, 2003). In Complexity and Contradiction in Architecture, Venturi contrasts Mies van der Rohe's "at least is more" with his "more is not less" (Venturi, 1977), alluding to a certain weariness or boredom in architecture, and perceives a new incorporation in architecture. space, which are communication systems. These go on to generate a certain mastery of the space of architecture and landscape, incorporating the concept of commercial persuasion and generating a vast and complex framework, with large spaces, high speeds and complex programs:

"Styles and signs establish connections between numerous elements, placed far away and seen in a hurry. The message is creepingly commercial; the context is basically new" (Venturi, Scott Brown & Izenour, 1978).

This approach generates a change in the following decade, derived from complex programs, from multiple perspectives, where the observer does not have a point of view, but feels disoriented by the multiple perspectives, the change of scale incorporating speed,

turning space winding and labyrinthine. Space requires signage to be understood, which is present in new issues, such as large airports, train stations, large hotels and megaprojects. The persuasion of the space is oral and explicit: communication (advertising signage, for example), reaches a size greater than that of the support building itself; architecture is relegated to communication.

Already in the 1990s, the new labyrinthine condition of the space implies the need to mark multiple centralities that are related as spatial continuities, not only in its pedestrian route but also in its visual route, since the space flows in the same way that one and the other node of the network are related without any possibility of control or predictability. The spaces designed by the star architects of the 90s, called the star system, account for the complexity and contradiction raised by Venturi. The space loses all limits, it is related to multiple centralities, in the same way as the technological-computer network. The change materializes in the fact that the space is not fragmented based on a determined and functional program, but rather is designed based on the premise of complexity; this complexity is made present through resources such as the continuity of space, which implies the breaking of the limits, the indetermination of their uses, the alternatives, the speed with which these spaces can be approached, and the possibility of being able to walk through them visually, because the elements of the classical architecture such as ceilings, walls, windows, but that indeterminacy is present with these new resources, which are sustained by a high technological development. From this, a behavior similar to the behavior of the Internet network (the web) can be deduced, where multiple centralities (knowledge nodes) are randomly related, marking the break with the linear process of the Industrial Revolution, to give rise to a conditioning to the most centralized, most distant or most frequent centrality. The architectural space has been reconfigured because it has a complexity that was absent in the Modern Movement.

Precisely, the Modern Movement sought to organize space as an industrial process is organized: linear, standardized, where the elements are clearly identified and where the process begins with a high degree of foresight regarding its result. Meanwhile, the post-paradigm works show a lack of identification and generate confusion, like the one generated by a labyrinth. A change of process by procedure is noted, where the procedure does not allow a certain result to be foreseen. (López Frasca, 2011)

This new paradigm has implications not only in the practice of architecture, but also in its teaching, where the program acquires the value of one among many inputs. This program is, at the same time, very present, because the client takes it with him in each direct correction in which he participates and at the same time, it totally disappears from the design process, (as proof of decisions) replaced by other processes and concepts. The urban, the economic, the constructive, the technical acquire more strength.

HYPOTHESIS

In the design process, there is a linear sense, a beginning and an inevitable end. It is based on an architectural program (of needs) that arose in the Modern Movement. The result is a space configured by a static sum of functions.

The project procedure becomes a non-programmatic form; acts analogously to the logic of networks. It consists of an assemblage of inputs incorporated with a random imprint. In the procedure there is wandering, which Gausa says "Function that gives the position of a point in space whose temporal evolution is governed by chance. Synonym of

random function. (...) In the visual language wandering, designates an excursion lacking a precise goal, or whose goal changes as it progresses, and is therefore unpredictable" (Gausa et al (2005) p. 606).

For the Modern Movement, the client was identified as a user, while for post-paradigm architecture the client does not have a real existence, but legal existence (SA, SRL, etc.), and the so-called star system architects denote the existence of a brand, thus constituting a relationship between brand-capital.

The architects of the star system are those who are linked to the idea of information technology, since they have access to the mass media, are related to power, to capitalism; where the need is not captured as such, but sifted with the idea of the need to fructify the capital.

Capital is the one who makes the decisions of the new paradigm. Coincidentally with this, a network of capital shares begins to develop, which is supported by projects by renowned architects who are hired regardless of their origin, which denotes in the first instance what the client instead of having a physical existence and identity real, has legal existence (S.A., S.R.L., etc.), and that the architect represents a brand that supports an investment (Curtis, 2008).

The cubist conception of space incorporated the fourth dimension, the variable: time, while post-paradigm architecture works incorporate the concept of speed-flow, replacing the term circulations with intertwined circuits, that is, links between transits or routes, of people, vehicles or flows (Gausa et al, 2005).

That is to say, the architectural program of the Modern Movement was supplanted by inputs; the user, by client of legal existence; time by speed-flow, circulations, by intertwined circuits; the process, by procedure.

The architectural space cannot be thought of as a social construction. The forms and spatial processes are formed by the dynamics of the general social structures, which include contradictory tendencies, derived from the conflicts and existing strategies between the social actors that put their opposing interests and values into play.

Accepting the definition of Castells (2008) of social processes as those that make up space by acting on the built environment, inherited from previous socio-spatial structures.

GOAL

It seeks to generate new knowledge about the probable relationship between the main characteristics of the technological-informational paradigm and the variables that reconfigure the architectural and urban space.

Do the new information technologies have an influence on the configuration of the architectural space? It is based on the idea that information technology is also communication technology, therefore, knowledge technology.

This activity allowed us to investigate and identify common or variable principles between paradigmatic or post-paradigm architectural projects for analysis that allow discovering connections that reflect the informational technological paradigm for the reconfiguration of architectural and urban space.

Propose a theoretical basis that connects the characteristics of the ICT paradigm with the new ways of projecting the architectural space.

Determine how the student projects today, and with what elements he works.

Discover the inputs that feed the project.

Analyze if there are elements that are repeated in both continents.

QUESTION MARKS

How does the new paradigm condition the conception of architectural space?

Is the compositional system a reflection of

the thinking of the time?

What tools are the ones that operate so that the space is reconfigured?

METHODOLOGY

VIRTUAL TEACHING-LEARNING PROJECT

Although joint work was being planned between two academic units, two schools, two continents, the pandemic that led to the mandatory closure and the unpredictability of the return to the classroom challenged us. We responded with a virtual teaching-learning project that was planned to be developed in one semester. The closure, like a paradox, made us think of an opening, of turning this impediment into an opportunity. This opportunity made us put to the test the virtual dictation of a semester course between two continents, two different time zones, managing to coordinate three weekly meetings. It was framed within the Technological-Informational paradigm: flexible, interactive, unpredictable, collaborative, networked.

The concept of living appears as a referent that goes beyond what it originally meant. Its sphere, which up to now was closed to the domestic sphere, is extended to the social field. To the relational between people, to coexistence in any field.

The space to inhabit becomes flexible. New needs arise before new challenges. The combination of different cultures and visions enrich a generative design created from the interrelation of data and information. The validations of different affirmations give the security to the students to continue with the experimentation in pursuit of a surprising and satisfactory result.

PEDAGOGICAL STRUCTURE

The course shared during the months of September to December of the year 2020 between the Laboratory Workshop of the Faculty of Architecture of Mendoza, Argentina and the fourth year Unit of the School of Architecture of Madrid, Spain, was a very powerful and enriching teaching experience. These two academic units belonging to two continents, of two similar levels –fourth year-, met to jointly and simultaneously teach the students of both institutions. This way mixed work cells were constituted presenting a unique architectural project. The interchangeable corrections were closed with qualifications, of all with all, through the disappearance of limits and borders, and the combination in a single teaching entity.

The pedagogical structure consisted of six thematic groups: the model, the prototype, the client, the negotiation, the conferences-conversations and the deliveries.

SELECTION OF PROJECT SPACES

The projects were carried out in one of the two continents (Argentina) for which the local students belonging to the University of Mendoza had to transfer data, knowledge, geomorphological aspects, that is, everything necessary to carry out the project. This was a great challenge to be able to transfer the characteristics of the territory where it was going to intervene, since it meant the impossibility of the students from Spain in recognizing the characteristics of the site. Therefore, it was necessary to create a language that allowed supplanting the impossibility of physically traversing the terrain to intervene. For this, an approximation to the territory was carried out through an investigation and survey that could provide knowledge of the territory. In the pedagogical framework, three sites were selected in different departments that are part of the Mendoza Metropolitan Area that respond to a political-administrative division: Capital, Godoy Cruz and Luján de Cuyo Departments. For the purposes of comparing differences and similarities in

regards to: urban growth model, densities, land use, population characteristics, facilities, services, etc.

RESULTS

RECORDED RECORDING OF CLASSES

We proposed a non-traditional teaching-learning mode, with the intention of leaving a real non-descriptive record through the recordings of all the classes, whose final objective would allow us to analyze and verify the process. Therefore, the transcripts of paragraphs of students and teachers will be presented below, showing the process. This had an innovative result that resulted in the publication of a book as a record of the workshop work as a final product.

- "I was interested in the subject of Mendoza as an oasis city in an artificial oasis, for which I investigated how the desert slats are deformed, which are like layers of water that can arise from nowhere. Then I read that in the city of Mendoza this system could work, but the periphery has desertification problems. For which reason I have been investigating a system in which the building can be self-sufficient from that groundwater".

Figure

- "Model: vegetal architecture. Architectures that remove the human figure from the process and have a certain degree of randomness. Control the randomness of building with vegetables. Cultural and ecological advantages".

Figure

- "In this phase do not think about solving everything, but you are producing a situation depending on the means you have to decide."

- "Do not fall into the metaphorical question, the problem is that it does not have to be the representation of some intentions, it has to be a material experimentation, and here we are seeing environment-prototype-data-model".

- "How do you give a twist to this principle to hook it to the environment that is already raised?"

Figure

- "This must be an explanation of an experiment, not a physical process, but rather an explanation of the project you are going to do. So how would you change the prototype."

- "I would like the client to tell us what he thinks will work in this neighborhood, the importance of the houses, what square meter they are going to have, what programs are interesting... He could also tell us what the budget per square meter is.

- I have dedicated my whole life to the real estate business. That is why I have a vision of the owner that is different from the one that you architects or the school have. When developing a real estate project, sometimes the dream that architects want to achieve cannot be brought to reality. In this context of country and economy you are going to find yourself with a series of circumstances that do not make the project so viable. This is the small contribution that I can make. The students will try to translate their ideas, and I will take care of the economic and commercial part".

Figure

- "The projects with the most coincidences are not necessarily the best to negotiate. Divergences can lead to more interesting results. Complexity. Not looking for the same but finding complexity with those convergences."

- "I am interested in refunds. The prototype has to appear after this geometric restoration that takes you to the model. How can we build this? Although this digital theme eroticizes us, in the end material reality is what makes us what we are: architects.

The result with the expectations originally raised. The methodology has proven efficient in this stage of pandemic and confinement,

where the physical distance was the same for everyone, regardless of geographical position, recovering learning between students, the so-called learning in the corridors, much more intense than what teachers can solve within the classroom, the aid has multiplied. There have been no dropouts when some supported others.

By implementing software such as Rhinoceros and Grasshopper, it was possible to verify how technology is not only a support tool in education, but is also decisive in the configuration of diagrams in the project procedure. In the virtual space the work of the students was developed together. This interface is the place where each member contributed their idea to a comprehensive project in constant transformation. The University stopped being a stable physical place, in a single point, to become a collaborative network controlled by the student. They and they will replace a title linked to a site, a historical institution and a building by a passport filled with various faculties, with various professors, linked to divergent but personal interests. The student will build, make, this way, his own study plan, adapting it in real time to her interests. In short, to the future and skills that she wants to achieve.

CONCLUSION

The democratic and collective thought allows a constant exploration and testing of possibilities, expanding its scope. This experience modified the records of traditional education towards a democratization of knowledge and information, generating significant social and cultural repercussions. In distant places, a relationship was simultaneously achieved through the network. The teacher left the platform and began to interact on platforms such as Teams and Miro, generating a change in the teacher-student relationship.

The combination of different cultures and visions enrich a generative design created from the interrelation of data and information. The validations of different affirmations give the security to the students to continue with the experimentation in pursuit of a surprising and satisfactory result.

UPM + UM EXCHANGE – FINAL MEETING OF STUDENTS

We started working on this in a year marked by virtuality, within the framework of the Covid-19 pandemic that brought with it countless structural problems in terms of the digital divide, as well as health problems. However, we managed to get away from that reality, connecting with students from another continent (the experience was developed in such a correct way that, at times, the distances were shortened and we forgot that we were in each city). They helped keep us busy in a complex task that involved the full use of our knowledge, which undoubtedly continued to encourage us to achieve excellence. In a cycle that was marked by trial and error, in fully implementing virtuality, we managed to perform in a professional and orderly manner, which gave us a small glimpse of our future working life.

With the project, we were enriched in multiple aspects. We learned new cultures, soaked up thousands of academic tips, and even managed to bond with our peers despite the distance. We exchange content and information with other students on a permanent basis, helping us discover resources to improve the methodological strategies that we develop in the process. The ETSAM students were characterized by their flexible and versatile imprint, especially when sharing knowledge, which surprised us. In the same way, the exchange was reciprocal and thanks to this we got involved in an almost playful process, in which both parties won.

This triumph, the result of the relationship, is what we want to share and use as a model for future meetings with students from our university.

During the course we were also able to detect that the pedagogical approach varies by institution, and thanks to the work dynamics of teachers we used these differences as tools that revalued the process. We found heterogeneous styles that led us to study family models and their variations over time, how this affects the habitat and the urban environment, and how these changes generate new lifestyles. We also had the opportunity to show the perspective based on an analysis of the city and with the well-being of its inhabitants as the main premise, from a systemic approach that considers the positive impact of improvements in the environment and in the relationships between those who inhabit a space.

As a Latin American cultural trait, we consider family one of the most important issues in life, and we were pleased to be able to work with the Spanish students, who recognized the importance of this as much as we did.

Through this subject in charge of the chairs and the human commitment assumed by each student who integrates it, we transform our traditional learning styles, incorporating innovative knowledge and discovering different ways of inhabiting architecture, which could only occur through exchange and of transculturation.

This experience, its meaning and the impact that it generated both in the formative, intellectual and human value highlight the advantages of collaborative virtual learning.